

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A furnace comprising a heating unit, a furnace body that can degrease an article to be degreased by heating the article with the heating unit, and a treatment gas-introducing unit, the article being disposed in the furnace body and containing an organic substance,

wherein the furnace body includes an outlet for discharging a degreasing gas containing a small amount of gaseous oxygen and a large amount of gaseous organic decomposition products generated in an internal section of the furnace body during the degreasing of the article and also includes an inlet for receiving a dilution gas, from outside, for reducing the concentration of the gaseous organic decomposition products in the furnace body to prevent the explosion of the gaseous organic decomposition products;

the heating unit includes a first heater that can heat and degrease the article disposed in the furnace body and a second heater which heats the degreasing gas discharged from the outlet of the furnace body such that the gaseous organic decomposition products are removed and such that the degreasing gas is converted into a treatment gas containing a small amount of gaseous oxygen;

the treatment gas-introducing unit is used to introduce the treatment gas for dilution into the internal section of the furnace body from the second heater through the inlet and/or the first heater; and

the treatment gas is introduced into the internal section of the furnace body from the inlet and/or the first heater in such a manner that the treatment gas is circulated through the internal section of the furnace body, the outlet, the second heater, the treatment gas-introducing unit, and the inlet and/or the first heater, whereby the concentration of the

gaseous organic decomposition products in the internal section of the furnace body is reduced such that explosion is prevented, whereby the concentration of gaseous oxygen in the internal section of the furnace body is maintained low such that the article is prevented from being cracked due to the abnormal combustion of the gaseous organic decomposition products, and whereby the article can be degreased in a short time and then subjected to a subsequent firing step-step.

the furnace further comprising:

a heat exchanging unit downstream the first heater and upstream the treatment gas-introducing unit, wherein the treatment gas, after going through the heat exchanging unit, is divided into two parts, including a heat exchange gas that gets circulated back to the furnace body, and an exhaust gas that is output from the furnace without being further circulated back to the furnace body; and

a blower provided at the treatment gas-introducing unit, wherein the blower circulates the treatment gas into the furnace body, and circulates the heat exchange gas back into the furnace body.

2. (Currently Amended) A furnace comprising a heating unit, a furnace body that can degrease an article to be degreased by heating the article with the heating unit, and a treatment gas-introducing unit, the article being disposed in the furnace body and containing an organic substance,

wherein the furnace body includes an outlet for discharging a degreasing gas containing a small amount of gaseous oxygen and a large amount of gaseous organic decomposition products generated in an internal section of the furnace body during the degreasing of the article and also includes an inlet for receiving a dilution gas, from outside, for reducing the concentration of the gaseous organic decomposition products in the furnace body to prevent the explosion of the gaseous organic decomposition products;

the heating unit includes a ~~third~~ heater which heats the degreasing gas discharged from the outlet of the furnace body such that the gaseous organic decomposition products are removed and such that the degreasing gas is converted into a treatment gas containing a small amount of gaseous oxygen;

the treatment gas-introducing unit is used to introduce the treatment gas for dilution into the internal section of the furnace body from the ~~third~~ heater through the inlet; and

the treatment gas is introduced into the internal section of the furnace body from the inlet in such a manner that the treatment gas is circulated through the internal section of the furnace body, the outlet, the ~~third~~ heater, the treatment gas-introducing unit, and the inlet, whereby the concentration of the gaseous organic decomposition products in the internal section of the furnace body is reduced such that explosion is prevented, whereby the concentration of gaseous oxygen in the internal section of the furnace body is maintained low such that the article is prevented from being cracked due to the abnormal combustion of the gaseous organic decomposition products, and whereby the article can be degreased in a short time and then subjected to a subsequent firing ~~step~~.

the furnace further comprising:

a heat exchanging unit downstream the heater and upstream the treatment gas-introducing unit, wherein the treatment gas, after going through the heat exchanging unit, is divided into two parts, including a heat exchange gas that gets circulated back to the furnace body, and an exhaust gas that is output from the furnace without being further circulated back to the furnace body; and

a blower provided at the treatment gas-introducing unit, wherein the blower circulates the treatment gas into the furnace body, and circulates the heat exchange gas back into the furnace body.

3. (Previously Presented) The furnace according to Claim 1, further comprising a low-oxygen content gas-introducing unit for introducing a low-oxygen content gas, different in supply line from the treatment gas, into the internal section of the furnace body in addition to or instead of the treatment gas-introducing unit.

4. (Previously Presented) The furnace according to Claim 1, wherein the organic substance contains at least one selected from the group consisting of polyvinyl alcohol, polyethylene glycol, starch, methylcellulose, carboxymethylcellulose, hydroxyethylcellulose, hydroxypropylmethylcellulose, polyethylene oxide, sodium polyacrylate, polyacrylamide, polyvinyl butyral, ethylcellulose, cellulose acetate, polyethylene, an ethylene-vinyl acetate copolymer, polypropylene, polystyrene, an acrylic resin, polyamide, glycerin, polyethylene glycol, and dibutyl phthalate.

5. (Previously Presented) The furnace according to Claim 1, wherein the concentration of gaseous oxygen in the internal section of the furnace body is maintained at 0.5 to 17 volume percent using the treatment gas.

6. (Previously Presented) The furnace according to Claim 1, wherein the first to second heaters are gas burners.

7. (Previously Presented) The furnace according to Claim 1, wherein the treatment gas-introducing unit includes a sealed pipe for communicatively connecting the second heater to the furnace body.

8. (Previously Presented) The furnace according to Claim 1, further comprising a heat-exchanging unit disposed between the second heater and the treatment gas-introducing unit.

9. (Previously Presented) The furnace according to Claim 1, wherein the article is porous and the percentage of the sum of the volumes of inflammable and/or non-volatile inorganic compounds remaining in the degreased article in the apparent volume of the

degreased article $[(\text{the sum of the volumes of inflammable and/or non-volatile inorganic compounds remaining in the degreased article}) / (\text{the apparent volume of the degreased article}) \times 100]$ is preferably 5% to 60%.

10. (Currently Amended) A degreasing method comprising a step of degreasing an article to be degreased using a furnace including a heating unit, a furnace body, and a treatment gas-introducing unit by heating the article with the heating unit and a firing step subsequent to the degreasing step, the article being disposed in an internal section of the furnace body and containing an organic substance,

wherein the furnace body includes an outlet for discharging a degreasing gas containing a small amount of gaseous oxygen and a large amount of gaseous organic decomposition products generated in the internal section of the furnace body during the degreasing of the article and also includes an inlet for receiving a dilution gas, from outside, for reducing the concentration of the gaseous organic decomposition products in the furnace body to prevent the explosion of the gaseous organic decomposition products; the heating unit includes a first heater that can heat and degrease the article disposed in the furnace body and a second heater which heats the degreasing gas discharged from the outlet of the furnace body such that the gaseous organic decomposition products are removed and such that the degreasing gas is converted into a treatment gas containing a small amount of gaseous oxygen; the treatment gas-introducing unit is used to introduce the treatment gas for dilution into the internal section of the furnace body from the second heater through the inlet and/or the first heater; and

the treatment gas is circulated through the internal section of the furnace body, the outlet, the second heater, the treatment gas-introducing unit, and the inlet and/or the first heater, whereby the concentration of the gaseous organic decomposition products in the internal section of the furnace body is reduced such that explosion is prevented, whereby the

concentration of gaseous oxygen in the internal section of the furnace body is maintained low such that the article is prevented from being cracked due to the abnormal combustion of the gaseous organic decomposition products, and whereby the article can be degreased in a short time and then subjected to the subsequent firing ~~step-step~~.

the furnace further comprising:

a heat exchanging unit downstream the first heater and upstream the treatment gas-introducing unit, wherein the treatment gas, after going through the heat exchanging unit, is divided into two parts, including a heat exchange gas that gets circulated back to the furnace body, and an exhaust gas that is output from the furnace without being further circulated back to the furnace body; and

a blower provided at the treatment gas-introducing unit, wherein the blower circulates the treatment gas into the furnace body, and circulates the heat exchange gas back into the furnace body.

11. (Original) The degreasing method according to Claim 10, wherein the treatment gas is circulated through the internal section of the furnace body, the outlet, the second heater, the treatment gas-introducing unit, and the inlet without operating the first heater.

12. (Currently Amended) A degreasing method comprising a step of degreasing an article to be degreased using a furnace including a heating unit, a furnace body, and a treatment gas-introducing unit by heating the article with the heating unit and a firing step subsequent to the degreasing step, the article being disposed in an internal section of the furnace body and containing an organic substance,

wherein the furnace body includes an outlet for discharging a degreasing gas containing a small amount of gaseous oxygen and a large amount of gaseous organic decomposition products generated in the internal section of the furnace body during the

degreasing of the article and also includes an inlet for receiving a dilution gas, from outside, for reducing the concentration of the gaseous organic decomposition products in the furnace body to prevent the explosion of the gaseous organic decomposition products; the heating unit includes a ~~third~~ heater which heats the degreasing gas discharged from the outlet of the furnace body such that the gaseous organic decomposition products are removed and such that the degreasing gas is converted into a treatment gas containing a small amount of gaseous oxygen; the treatment gas-introducing unit is used to introduce the treatment gas for dilution into the internal section of the furnace body from the ~~third~~ heater through the inlet; and

the treatment gas is circulated through the internal section of the furnace body, the outlet, the ~~third~~ heater, the treatment gas-introducing unit, and the inlet, whereby the concentration of the gaseous organic decomposition products in the internal section of the furnace body is reduced such that explosion is prevented, whereby the concentration of gaseous oxygen in the internal section of the furnace body is maintained low such that the article is prevented from being cracked due to the abnormal combustion of the gaseous organic decomposition products, and whereby the article can be degreased in a short time and then subjected to the subsequent firing ~~step~~step.

the furnace further comprising:

a heat exchanging unit downstream the heater and upstream the treatment gas-introducing unit, wherein the treatment gas, after going through the heat exchanging unit, is divided into two parts, including a heat exchange gas that gets circulated back to the furnace body, and an exhaust gas that is output from the furnace without being further circulated back to the furnace body; and

a blower provided at the treatment gas-introducing unit, wherein the blower circulates the treatment gas into the furnace body, and circulates the heat exchange gas back into the furnace body.

13. (Previously Presented) The degreasing method according to Claim 10, further comprising a low-oxygen content gas-introducing unit for introducing a low-oxygen content gas, different in supply line from the treatment gas, into the internal section of the furnace body in addition to or instead of the treatment gas-introducing unit.

14. (Previously Presented) The degreasing method according to Claim 10, wherein the organic substance contains at least one selected from the group consisting of polyvinyl alcohol, polyethylene glycol, starch, methylcellulose, carboxymethylcellulose, hydroxyethylcellulose, hydroxypropylmethylcellulose, polyethylene oxide, sodium polyacrylate, polyacrylamide, polyvinyl butyral, ethylcellulose, cellulose acetate, polyethylene, an ethylene-vinyl acetate copolymer, polypropylene, polystyrene, an acrylic resin, polyamide, glycerin, polyethylene glycol, and dibutyl phthalate.

15. (Previously Presented) The degreasing method according to Claim 10, wherein the concentration of gaseous oxygen in the internal section of the furnace body is maintained at 0.5 to 17 volume percent using the treatment gas.

16. (Previously Presented) The degreasing method according to Claim 10, wherein the first to second heaters are gas burners.

17. (Previously Presented) The degreasing method according to Claim 10, wherein the treatment gas-introducing unit includes a sealed pipe for communicatively connecting the second heater to the furnace body.

18. (Previously Presented) The degreasing method according to Claim 10, further comprising a heat-exchanging unit and/or catalyst disposed between the second heater and the treatment gas-introducing unit and/or the low-oxygen content gas-introducing unit.

19. (Previously Presented) The degreasing method according to Claim 10, wherein the article is porous and the percentage of the sum of the volumes of inflammable and/or non-volatile inorganic compounds remaining in the degreased article in the apparent

volume of the degreased article [(the sum of the volumes of inflammable and/or non-volatile inorganic compounds remaining in the degreased article) / (the apparent volume of the degreased article) \times 100] is preferably 5% to 60%.

20. (New) The furnace according to claim 1, wherein the furnace is configured as a batch kiln.

21. (New) The degreasing method according to claim 10, wherein the furnace is configured as a batch kiln.